Job Specific Environmental Awareness Training – Mechanical and Electrical Technicians

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Course Objective: Significant environmental aspects are associated with mechanical and electrical work conducted at the NSLS. This course has been designed to provide you with the job-specific information that you need know to protect the environment and to meet Laboratory and Government regulations for handling the waste streams produced by these activities. The contents of this training have been extracted from the NSLS PRM and BNL Subject Area.

Description of Significant Environmental Aspect: Maintenance activities on accelerator systems and electrical systems in the NSLS produce three types of waste that must be controlled: RCRA[1] hazardous waste, industrial waste, and PCB contaminated waste.

- RCRA Hazardous Waste: Includes any chemical waste, or toxic metal such as lead, silver or mercury. Examples include lead scrap, soldering dross, mercury switches, waste solvent, batteries (except for alkaline batteries, which can go to the regular trash) and non-empty aerosol spray cans. Any non-hazardous material that becomes significantly contaminated with lead or lead dust also becomes a hazardous waste.
- Industrial Waste**:** Refers to non-RCRA hazardous waste that is banned from disposal into the regular trash by State and Federal regulations. Examples are waste oil and oily rags.
- PCB Wastes: Includes many fluid filled capacitors and transformers manufactured prior to 1979. Devices manufactured before 1979 should be treated as containing PCB's unless analysis proves otherwise.
- Liquid Discharge: Refers to any discharge of liquids containing regulated chemicals, including such compounds as ironand other metals.
- Storage or use of chemicals: Refers to the potential for spills, especially of oil.

RCRA hazardous waste and industrial waste are managed in the same manner, except that industrial wastes are labeled with a green non-hazardous waste label instead of a red hazardous waste label. If the oil or oily rags become contaminated with other chemical products, or lead, they become RCRA hazardous waste and must be labeled with a red hazardous waste label.

Some klystrons in building 725 contain PCB contaminated oil, as indicated by PCB labels on the units themselves. Any used oil from these units must be considered PCB waste and managed as such. Any associated materials coming into contact with this oil, such as gloves, rags, or secondary containment trays also must be considered PCB contaminated waste and be managed as such.

Training Requirements: Supervisors are required to read this form and to take RCRA Hazardous Waste Generator training. Mechanical and electrical technicians and engineers are required to read this form.

Operational Controls: RCRA hazardous and industrial wastes must be containerized, labeled and kept in a Satellite Accumulation Area (SAA) until the job is complete, or the container is full. Then, the container must be brought to the 90-day Storage Area by the RCRA trained person. A non-radioactive waste form shall be filled out that describes the waste.

Exceptions**:**

- Oily rags that are not contaminated with lead, PCBs or soaked with solvents shall be collected in a fireproof container. The contents of the container shall be bagged and identified with a green label, and brought to the 90-day Storage Area for disposal as an industrial waste. A non-radioactive waste form shall be filled out describing the waste.
- Lead scrap and solder dross shall be collected for recycling. Collect lead separately from other metals.

Specific Waste Information**:**

- Use of degreasing products other than "Genesolve 2000" must be assessed by the ES&H Staff to determine whether they contain chemicals that will cause a waste concern.
- Contact a member of the ES&H staff if you identify an article that is suspected to contain PCBs. Articles known or suspected to be PCB contaminated shall be labeled with a PCB label. If identified for disposal, they shall be de-energized and containerized if leaking. The out-of-service date shall be indicated on the label. The article shall be transferred to the 90-day Storage Area by a RCRA trained person in your group. PCB waste must be picked up by Waste Management 30 days from the out-of-service date (or date it was first generated). There is no satellite accumulation of PCB waste. Also, the door to the 90-day storage unit must be labeled as containing PCB waste when PCB waste is placed inside.

[1] Federal regulations for hazardous waste are contained in the Resource Conservation and Recovery Act (RCRA).

Response to Leaks/Spills: If a spill of oil or other chemical product occurs, take prompt action to prevent it from discharging to floor drains or sinks. Any discharge to a drain or to the outdoors must be reported to the Lab emergency response number (x2222) and to the NSLS Control Room Operator (x2550) or member of the NSLS ES&H staff. Any indoor spill greater than five gallons shall also be reported as described. You can clean up other spills on your own, if you are familiar with the hazards present and are comfortable doing so. If a PCB spill occurs (blown light ballast or leaking PCB article), secure the area and call x2222 and x2550.

Your Role and Responsibility: You are responsible for the proper management of your waste and to take prompt action in the event of a spill. If you are ever in doubt regarding the proper course of action, contact your supervision or a member of the NSLS ESH Staff.

Potential Regulatory and Environmental Impacts: Mismanagement of waste can result in violations of RCRA hazardous waste regulations. Discharge of oils and other chemicals to drains can result in violations of BNL release limits. Both can ultimately result in contaminated soil or groundwater. BNL is subject to fines and penalties for such violations, and is responsible for the clean-up costs associated with any required remediation.

Pollution Prevention and Waste Minimization: Cooperate with NSLS's recycling efforts by collecting all scrap metal that you produce for recycling. Empty aerosol cans should be deposited into the dedicated empty aerosol-can recycling container (located by the NSLS Stockroom). Replacement of PCB capacitors with non-PCB containing capacitors reduces the risk of spills and mismanagement of waste. Please offer any suggestions and comments to your supervision about pollution prevention and waste minimization in order to help the NSLS reduce disposal costs and achieve waste minimization goals.

Print Name	Sign Name	Life Number	Date

Signature conveys that you have read and understand this information.

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NSLS Environmental Management Training

Background Environmental and hazardous waste management regulations are among the most sensitive and visible issues in the American society. At BNL, these regulations are indisputably the most sensitive topic within the ESH arena since environmental releases and the perception of poor waste handling practices were at the heart of the AUI discharge by DOE and in the development of the strong management emphasis on these issues. In light of the high visibility and sensitivity to these issues, BNL management committed to the development of an Environmental Management Program that met all the requirements of ISO 14001, an international organization which has adopted standards for many types of programs, including environmental management.

A key issue within ISO 14001 is the identification of all activities at a facility that are associated with significant environmental aspects. All activities involving a significant aspect are to be managed and controlled to ensure that no adverse environmental impact results. As a part of that program, all personnel whose work involves a significant environmental aspect[2] will be provided specific environmental awareness training relating to their duties.

There are seven work activities at NSLS that are involved with our facilities' significant environmental aspects. These activities are:

- Regeneration of process water mixed bed deionizing and Cooling Water System Maintenance
- Machine shop operations
- Photographic dark room operations
- Vacuum pump maintenance
- Electrical/mechanical assembly
- Experimental Program
- 90 Day/Satellite Area Operation
- Silicon Crystal Etching

For each of these activities, job specific training has been developed to ensure knowledge of applicable requirements that should be followed to properly control the significant environmental aspect.

[2] Significant environmental aspects have been defined at BNL as involving any of the following issues:

- Generation of any amount of industrial, hazardous, radioactive, mixed or medical wastes
- Air or liquid effluents or emissions exceeding defined values
- Storage or use of chemicals or radioactive material above certain thresholds